FIELD EFFICACY OF CHOLECALCIFEROL OAT BAIT FOR POCKET GOPHER (THOMOMYS SPP.) CONTROL

Gary W. Witmer, George H. Matschke, and Dan L. Campbell
Denver Wildlife Research Center
Denver, CO
Field Rodent Symposium Sponsored by WRCC95

DECEMBER 7 & 8, 1993
RENO, NEVADA

Abstract:

Cholecalciferol (Vitamin D) was evaluated as a field rodenticide for controlling pocket gophers (Thomomys spp.) under forest conditions. Laboratory investigations of this compound showed potential for controlling this genus that causes substantial reforestation, and other agricultural, damage in the Pacific Northwest. In these studies, radio-equipped pocket gophers were monitored following the application of 0.0%, 0.003%, 0.04%, and 0.075% (northeastern Oregon, 1991) and 0.15% (northwestern Washington, 1992) cholecalciferol oat baits. At least 40 g of bait (5 bait spots x 8 g per spot) were applied by hand into underground burrows at each active gopher site. In the Oregon study, posttreatment gopher mortality was 20% (0.0%), 12% (0.003%), 50% (0.04%), and 50% (0.075%). The difference in mortality in the four treatment groups was not significant ($p = 0.176$). The bait consumption may have been too low with alternative foods available or the cholecalciferol concentrations may have been too low. Also, three species of small mammals on the units may have competed with gophers for the baits. In the Washington study, posttreatment mortality was 8% (0.0%) and 92% (0.15%) in the first trial and 0% (0.0%) and 100% (0.15%) in the second trial. The difference in mortality between the treatments was significant ($p < 0.01$) in both trials. In the second trial, the control animals surviving the first trial were used; hence these gophers were pre-baited. The amount of 0.75% bait applied in the second trial was diluted 1:1 with the untreated (0.0%) bait before applications. Also, during the Washington study, 4 of 25 gophers were taken by predators after bait application; all radio-collars were recovered. We recommend that field trials be conducted with intermediate concentrations (e.g., 0.1% and 0.125%) of baits and with diluted 0.15% baits (1:1) without pre-baiting. Finally, we recommend that secondary hazards of cholecalciferol to predators be investigated.

CHOLECALCIFEROL OAT BAIT - POCKET GOPHER FIELD TRIALS, 1991-92

Species & Site	Concen. (%)	No.	% Efficacy (% Mortal.)	Significance Over Control
Thomomys talpoides	0.0	16	20	---
	0.003	16	12	No (p>0.1)
Wallowa-Whitman Nat'l. Forest Baker CO., OR	0.04	17	50	No (p>0.1)
	0.075	17	50	No (p>0.1)
	Trial 1:			
Thomomys mazama	0.0	13	8	---
	0.15	12	92	Yes (p<0.01)
	Trial 2:			
Meredian Seed Orchard Thurston Co. WA	0.0	5	0	---
	0.15*	4	100	Yes (p<0.01)

*The 0.15% oat bait was diluted 1:1 with control bait for the second trial.